FIG.1

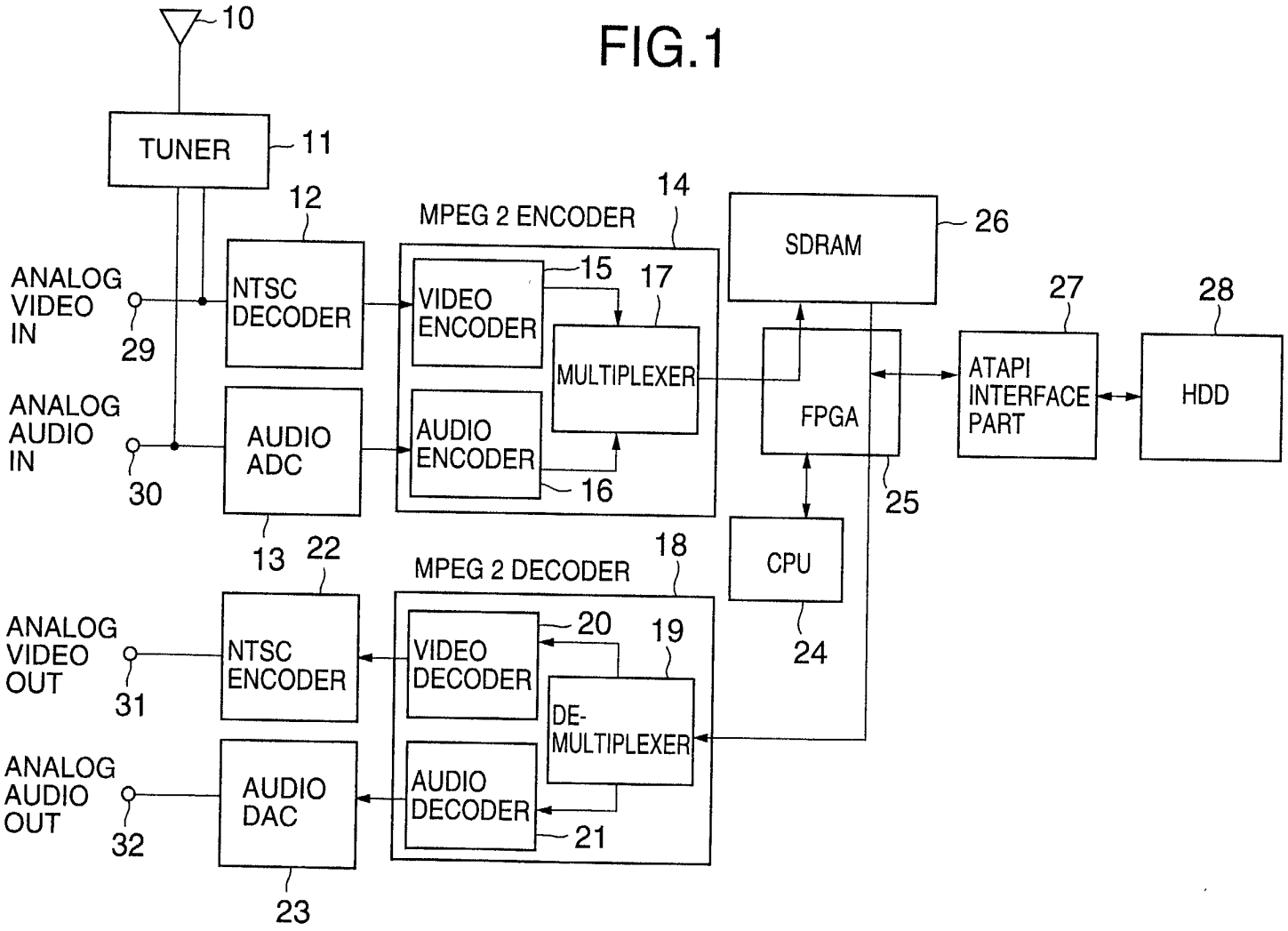

10
TUNER
11
12
MPEG 2 ENCODER
14
SDRAM
26
ANALOG VIDEO IN
29
NTSC DECODER
VIDEO ENCODER
15
17
MULTIPLEXER
27
28
ATAPI INTERFACE PART
HDD
ANALOG AUDIO IN
30
AUDIO ADC
AUDIO ENCODER
16
FPGA
25
13
22
MPEG 2 DECODER
18
CPU
24
ANALOG VIDEO OUT
31
NTSC ENCODER
VIDEO DECODER
20
19
DE-MULTIPLEXER
ANALOG AUDIO OUT
32
AUDIO DAC
AUDIO DECODER
21
23

FIG.2

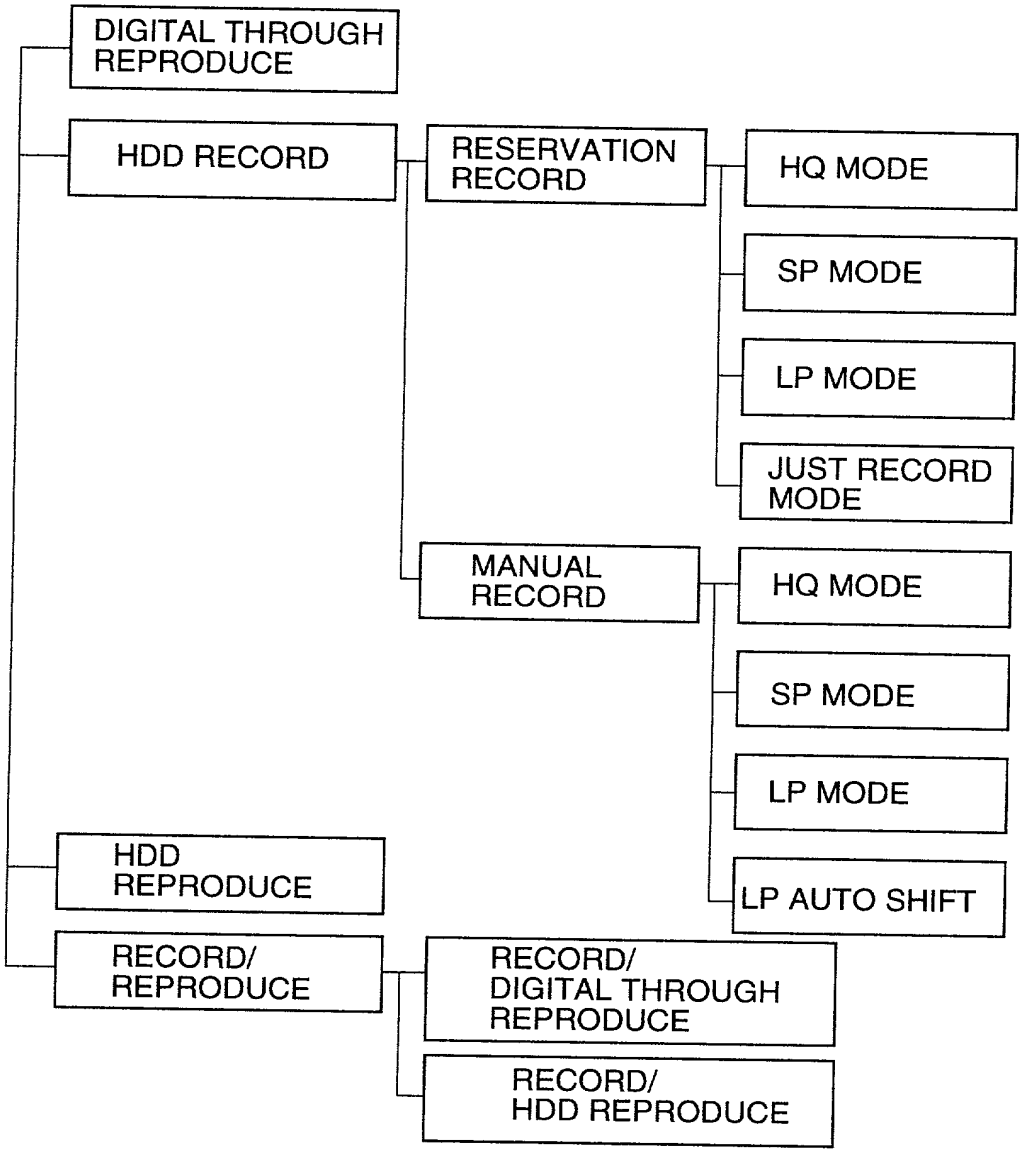

DIGITAL THROUGH REPRODUCE
HDD RECORD
RESERVATION RECORD
HQ MODE
SP MODE
LP MODE
JUST RECORD MODE
MANUAL RECORD
HQ MODE
SP MODE
LP MODE
LP AUTO SHIFT
HDD REPRODUCE
RECORD/ REPRODUCE
RECORD/ DIGITAL THROUGH REPRODUCE
RECORD/ HDD REPRODUCE

FIG.3

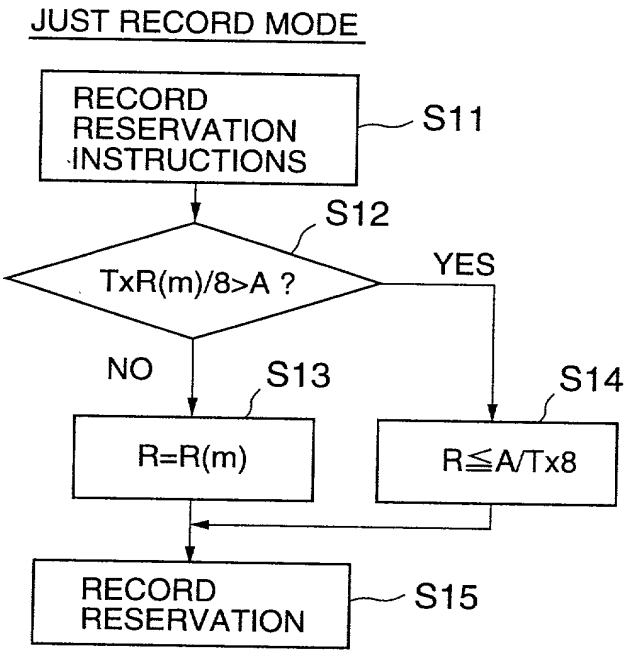
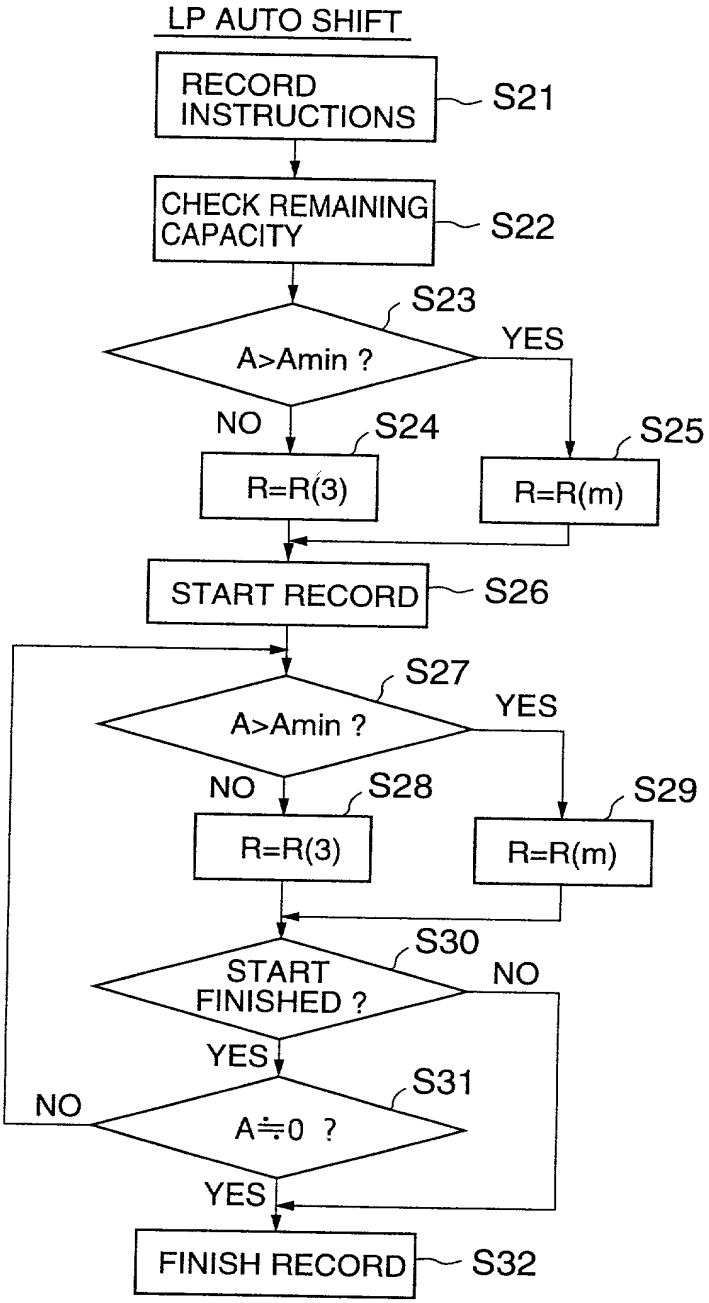

JUST RECORD MODE
RECORD RESERVATION INSTRUCTIONS
S11
S12
TxR(m)/8>A ?
YES
NO
S13
S14
R=R(m)
R≦A/Tx8
RECORD RESERVATION
S15

FIG.4


LP AUTO SHIFT
RECORD INSTRUCTIONS
S21
CHECK REMAINING CAPACITY
S22
S23
A>Amin ?
YES
NO
S24
S25
R=R(3)
R=R(m)
START RECORD
S26
S27
A>Amin ?
YES
NO
S28
S29
R=R(3)
R=R(m)
S30
START FINISHED ?
NO
YES
S31
NO
A≒0 ?
YES
FINISH RECORD
S32

20220 "A9508007

FIG.5

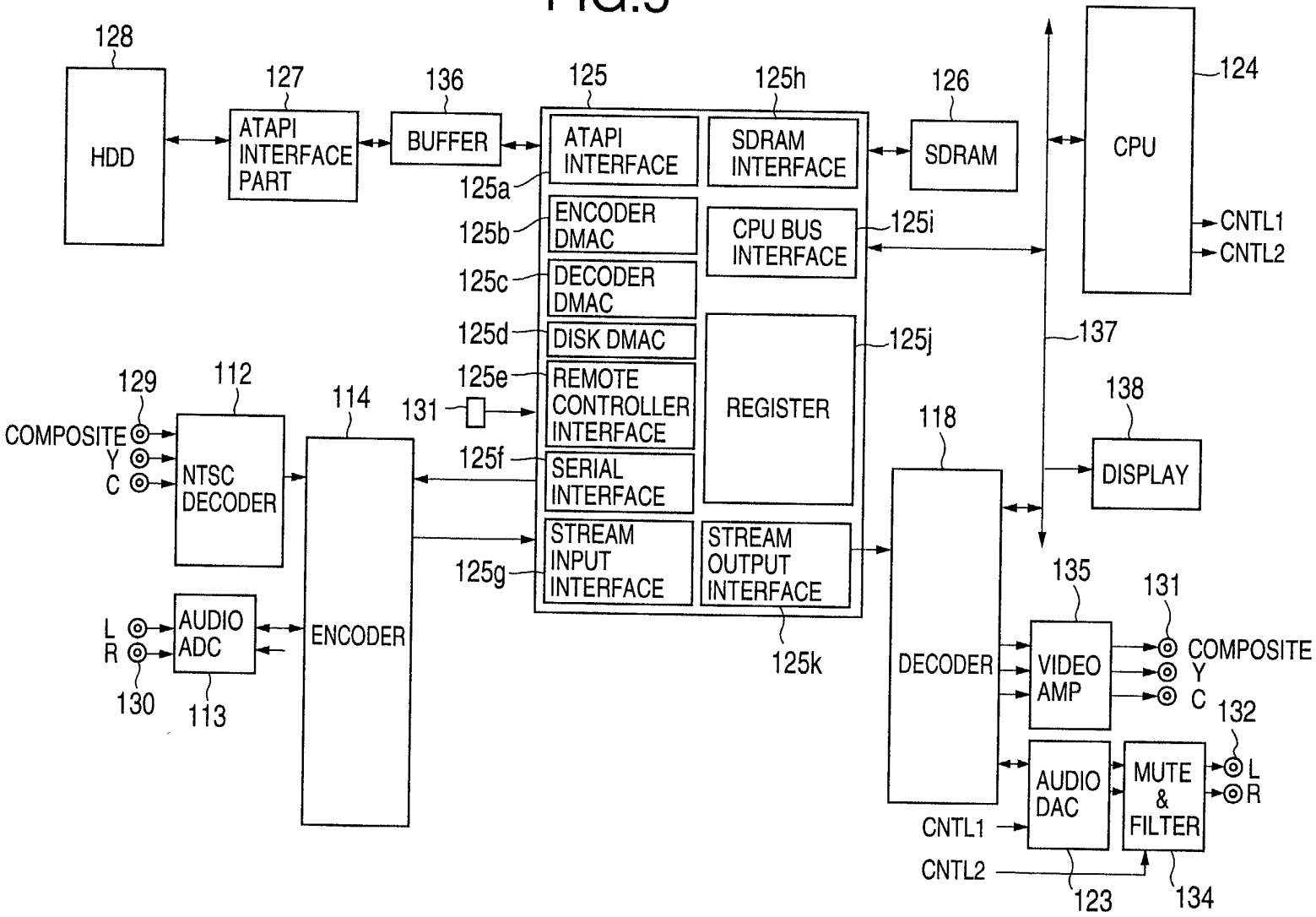


FIG.6

STATE TRANSITION DIAGRAM

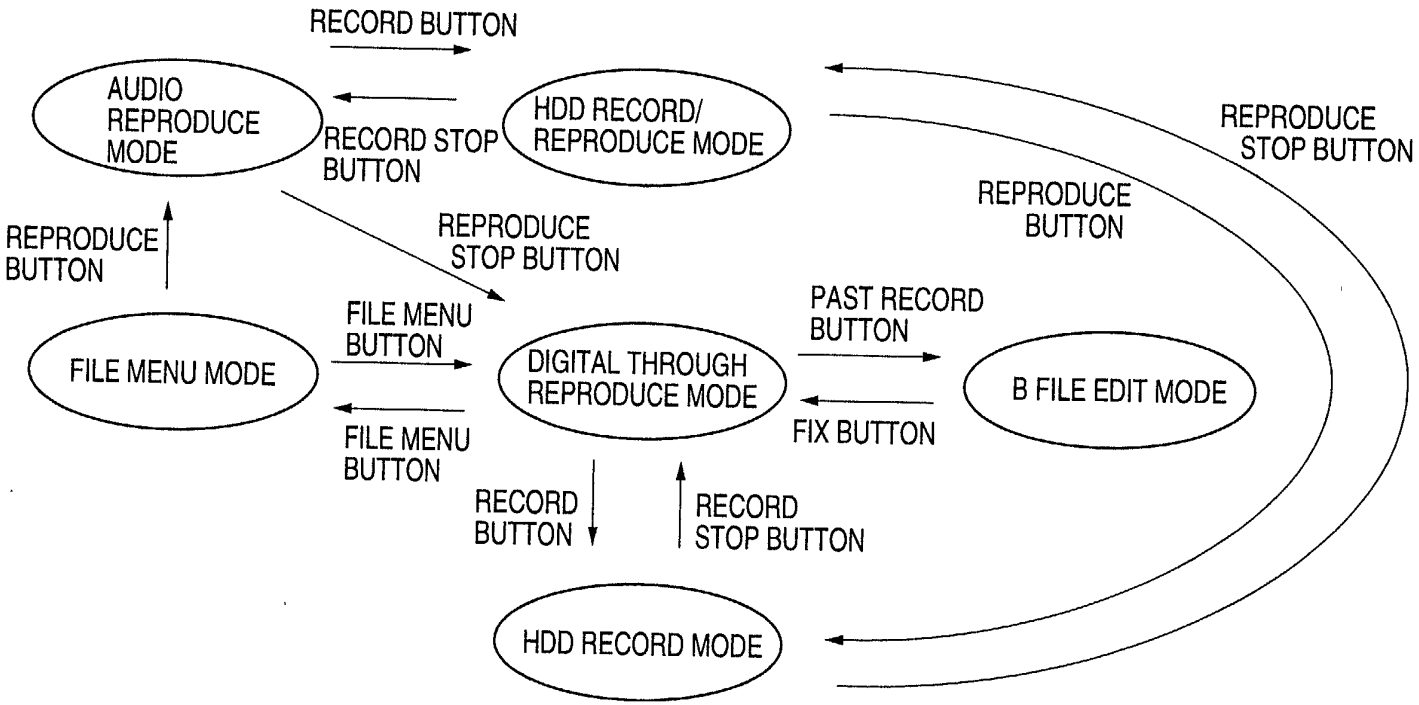


FIG.7

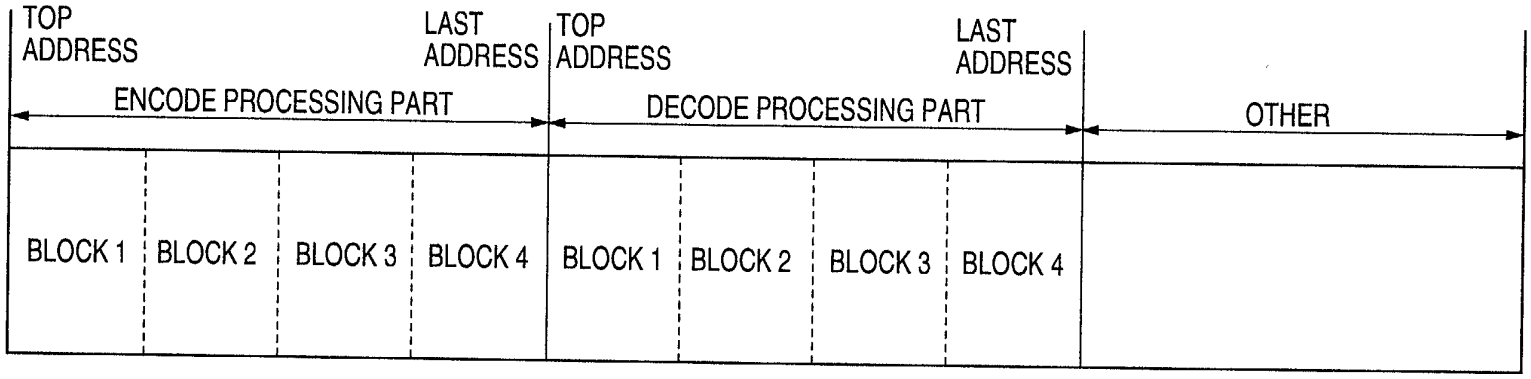

TOP ADDRESS
LAST ADDRESS
TOP ADDRESS
LAST ADDRESS
ENCODE PROCESSING PART
DECODE PROCESSING PART
OTHER
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4

FIG.8

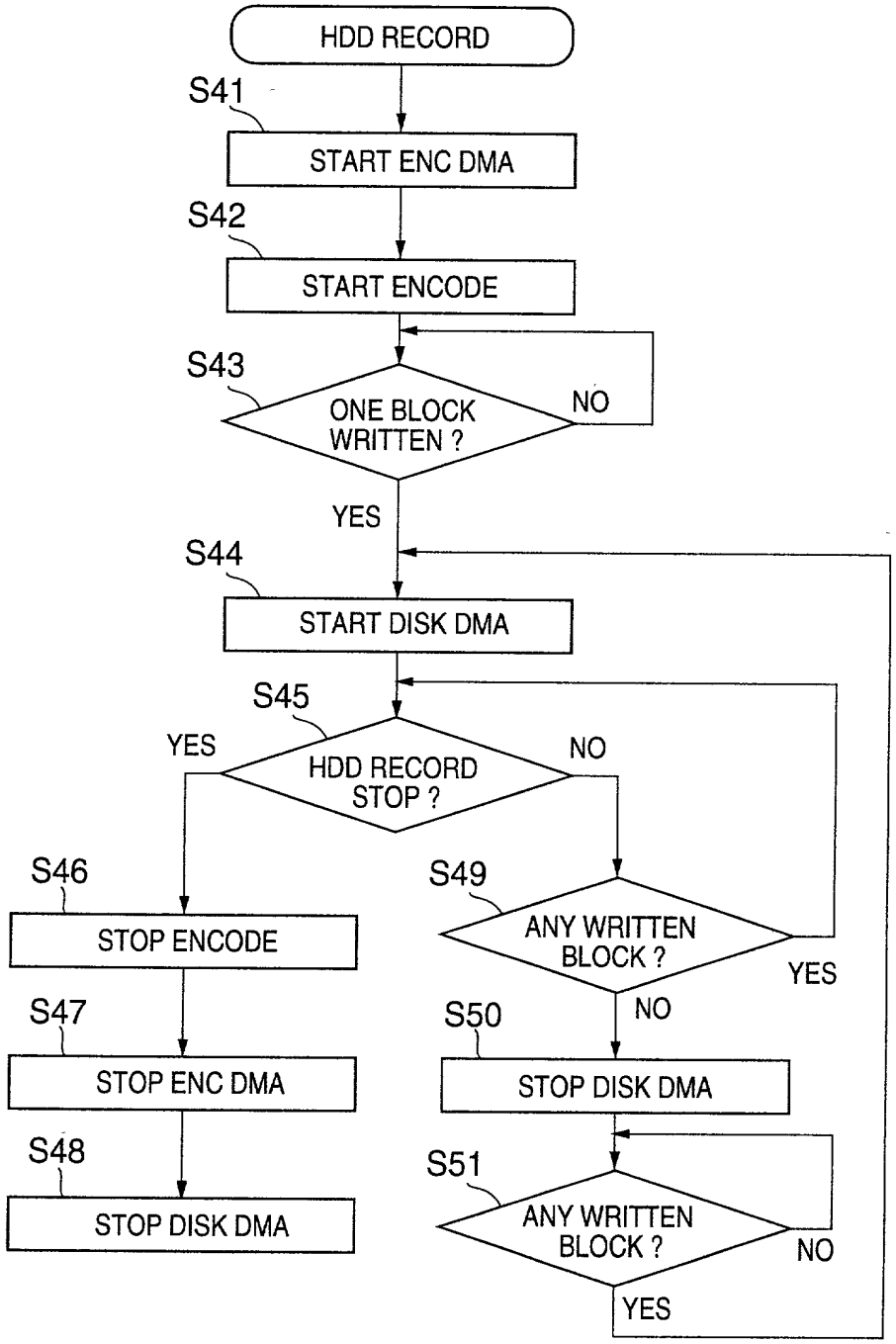

HDD RECORD
S41
START ENC DMA
S42
START ENCODE
S43
ONE BLOCK WRITTEN ?
NO
YES
S44
START DISK DMA
S45
YES
HDD RECORD STOP ?
NO
S46
STOP ENCODE
S47
STOP ENC DMA
S48
STOP DISK DMA
S49
ANY WRITTEN BLOCK ?
YES
NO
S50
STOP DISK DMA
S51
ANY WRITTEN BLOCK ?
NO
YES

FIG.9

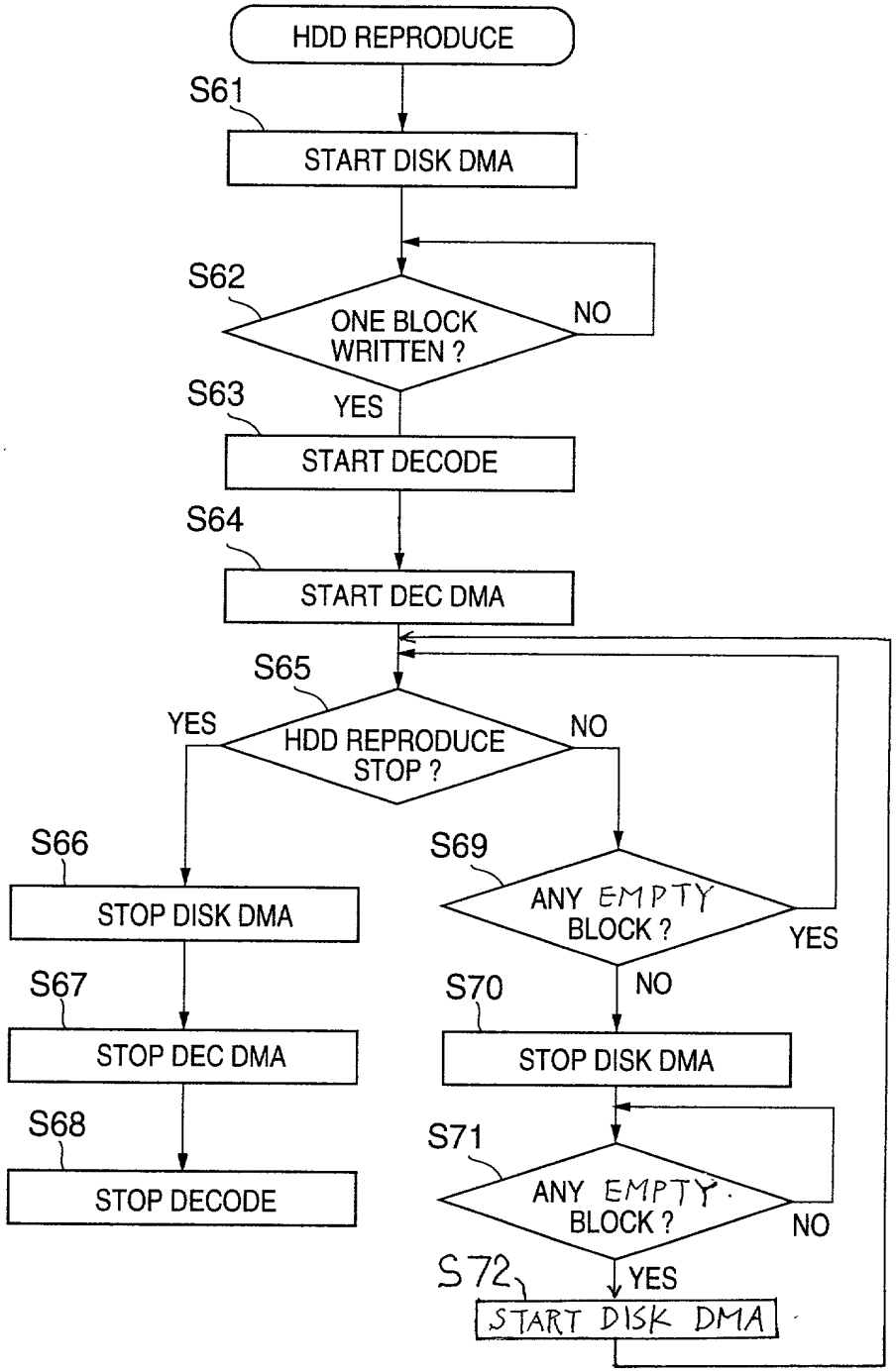

HDD REPRODUCE
S61
START DISK DMA
S62
ONE BLOCK WRITTEN ?
NO
YES
S63
START DECODE
S64
START DEC DMA
S65
HDD REPRODUCE STOP ?
YES
NO
S66
STOP DISK DMA
S67
STOP DEC DMA
S68
STOP DECODE
S69
ANY EMPTY BLOCK ?
YES
NO
S70
STOP DISK DMA
S71
ANY EMPTY BLOCK ?
NO
YES
S72
START DISK DMA

FIG.10

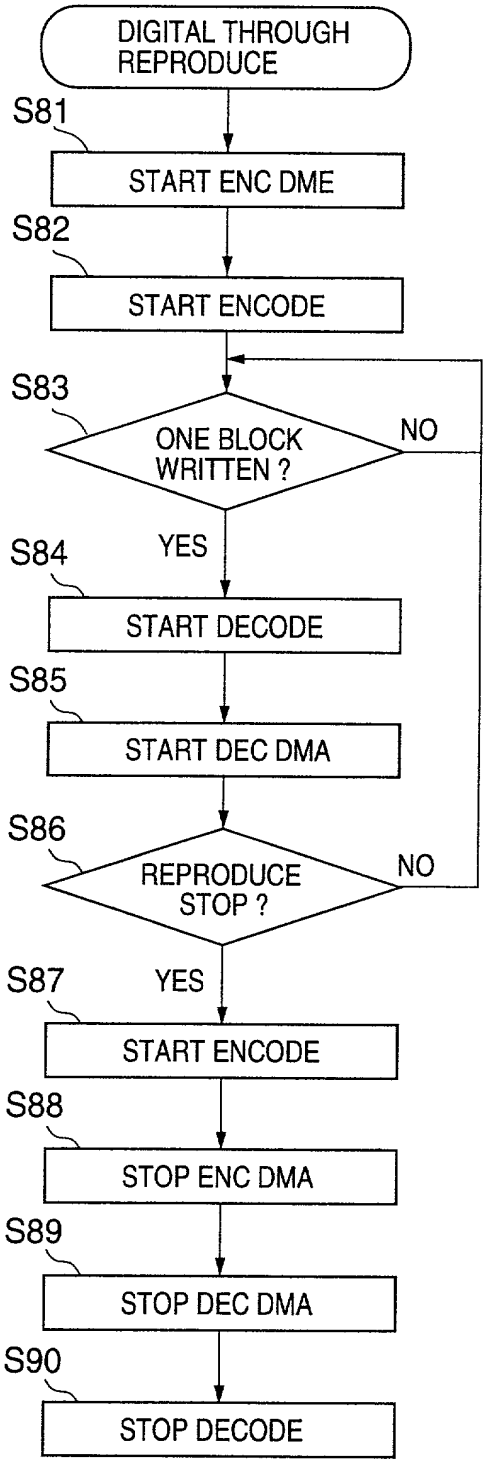

DIGITAL THROUGH REPRODUCE
S81
START ENC DME
S82
START ENCODE
S83
ONE BLOCK WRITTEN ?
NO
YES
S84
START DECODE
S85
START DEC DMA
S86
REPRODUCE STOP ?
NO
YES
S87
START ENCODE
S88
STOP ENC DMA
S89
STOP DEC DMA
S90
STOP DECODE

FIG.11

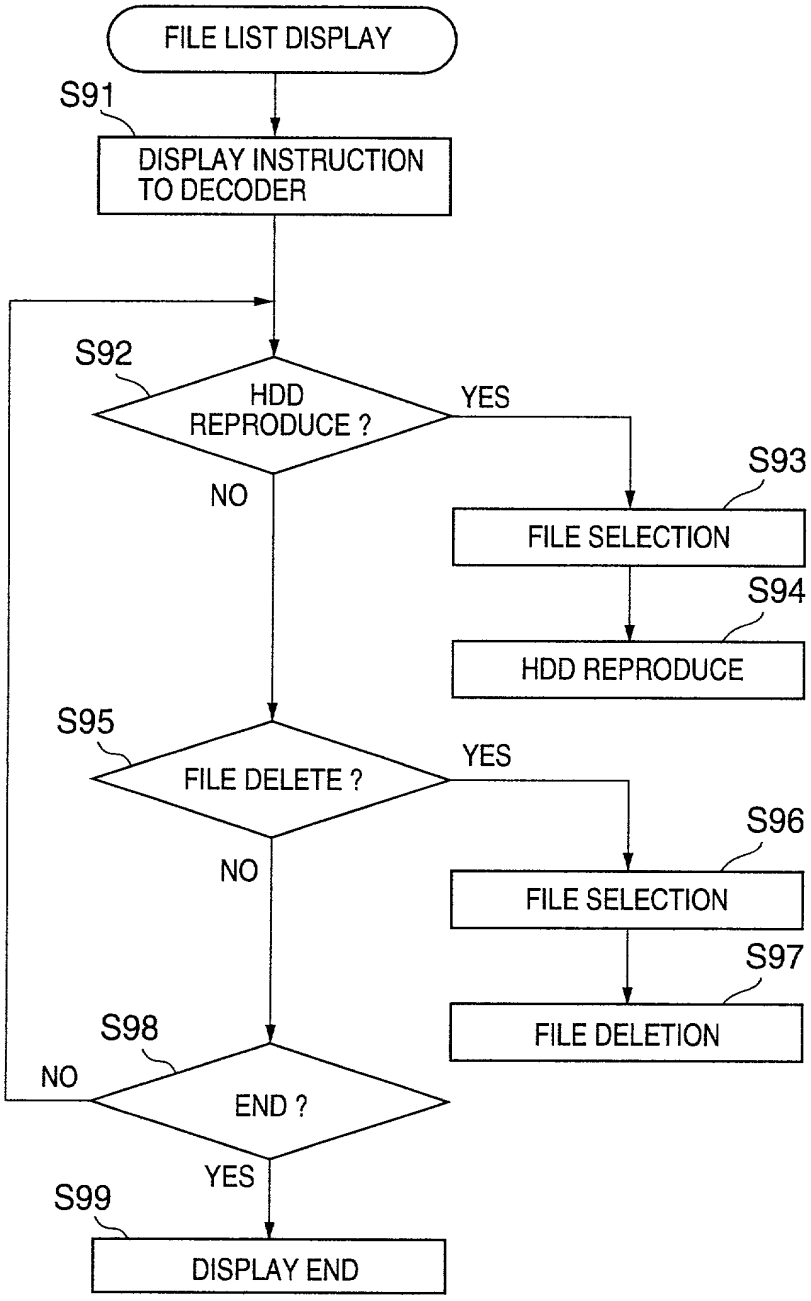

FILE LIST DISPLAY
S91
DISPLAY INSTRUCTION TO DECODER
S92
HDD REPRODUCE ?
YES
NO
S93
FILE SELECTION
S94
HDD REPRODUCE
S95
FILE DELETE ?
YES
NO
S96
FILE SELECTION
S97
FILE DELETION
S98
NO
END ?
YES
S99
DISPLAY END

FIG.12A

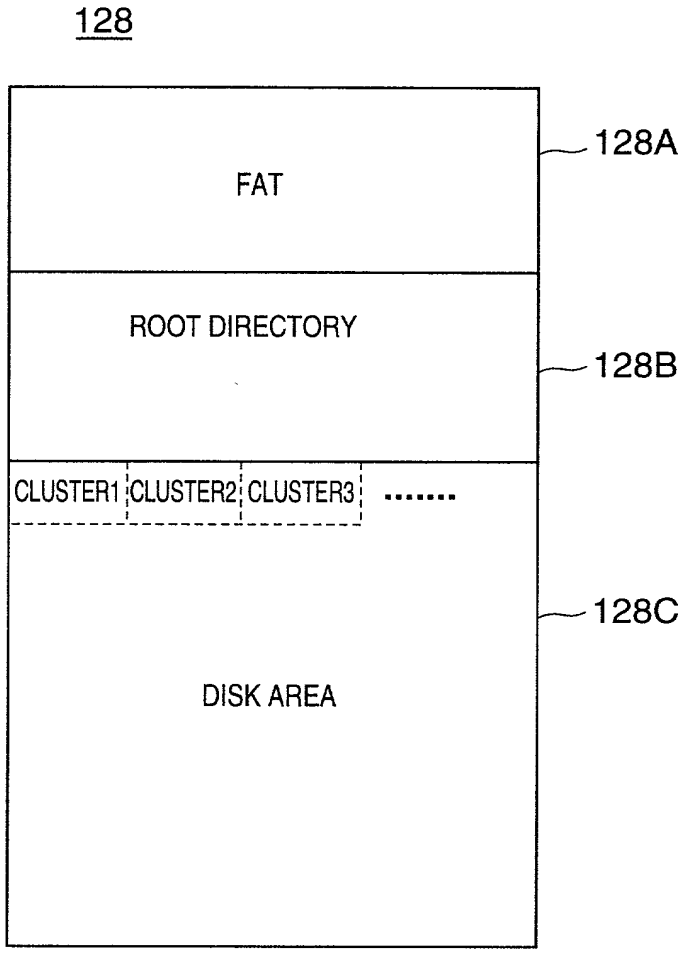


FIG.12B

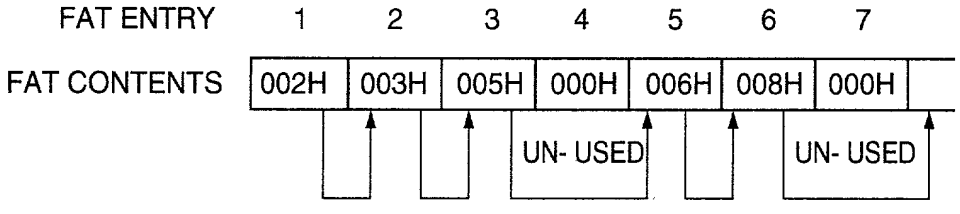


FIG.13A

① RECORD FILE LIST

FILE NAME	RECORD START DATE /TIME	RECORD LENGTH	RECORD MODE
FILE 1	00/02/19 21:00	2:00	HQ
FILE 2	00/02/25 19:00	1:35	LP
FILE 3	00/03/09 10:00	2:00	HQ

FIG.13B

② B FILE EDIT

STORABLE TIME ZONE

00/03/09 12:00 - 00/03/09 20:00

SET STORAGE TIME ZONE

RECORD START DATE /TIME: 00/03/09 18:00 (151)

RECORD END DATE /TIME: 00/03/09 19:00 (152)

FIG.13C

③ RECORD FILE LISTS

FILE NAME	RECORD START DATE /TIME	RECORD LENGTH	RECORD MODE
FILE 1	00/02/19 21:00	2:00	HQ
FILE 2	00/02/25 19:00	1:35	LP
FILE 3	00/03/09 10:00	2:00	HQ
FILE 4	00/03/09 18:00	1:00	LP

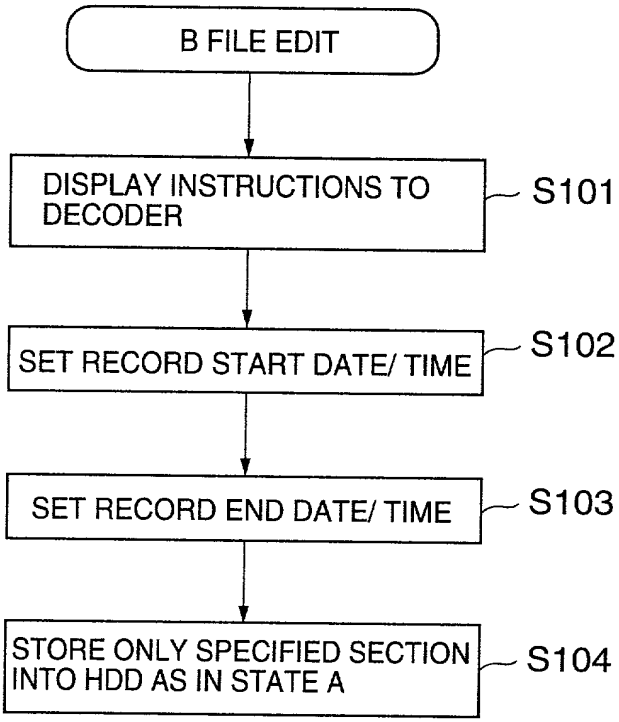
FIG.14A

	FILE NAME	RECORD START DATE /TIME	RECORD END DATE /TIME	RECORD MODE	STATE A/B
1	FILE 1	2000/2/19 21:00	2000/2/19 23:00	HQ	A
2	FILE 2	2000/2/25 19:00	2000/2/25 20:35	LP	A
3	FILE 3	2000/3/9 10:00	2000/3/9 12:00	HQ	A
4	FILE 4	2000/3/9 12:00	2000/3/9 20:00	LP	B

FIG.14B

	FILE NAME	RECORD START DATE /TIME	RECORD END DATE /TIME	RECORD MODE	STATE A/B
1	FILE 1	2000/2/19 21:00	2000/2/19 23:00	HQ	A
2	FILE 2	2000/2/25 19:00	2000/2/25 20:35	LP	A
3	FILE 3	2000/3/9 10:00	2000/3/9 12:00	HQ	A
4	FILE 4	2000/3/9 19:00	2000/3/9 20:00	LP	A

FIG.15


B FILE EDIT
DISPLAY INSTRUCTIONS TO DECODER
S101
SET RECORD START DATE/ TIME
S102
SET RECORD END DATE/ TIME
S103
STORE ONLY SPECIFIED SECTION INTO HDD AS IN STATE A
S104